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EXAMINER

RIVERO, MINERVA

ART UNIT PAPER NUMBER

2655

DATE MAILED: 11/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/927,916	Applicant(s) WAKEFIELD ET AL.	
	Examiner Minerva Rivero	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 September 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☒ Claim(s) 7, 9-10 and 17-20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. In the Remarks filed 9/07/05, Applicants submitted arguments for allowability of pending claims.

Response to Arguments

2. Applicant's arguments filed 9/07/05 (see Remarks, pp. 6-15) have been fully considered but they are not persuasive.
3. Regarding the obviousness double patenting rejection, Applicant argues that no prima facie case has been made. However, Applicant should note that the method and system have one-to-one correspondence between steps and functions. As such, they are self-evidently unpatentable over each other.
4. Regarding claims 1-2, 4-6, 8 and 11-15 Applicant argues that Tsourikov *et al.* disclose the expansion of the number of subject-action-object (SAO) structures, rather than the condensing of thematic roles, with respect to the *unification* step. The examiner cannot concur with the Applicant. The step of *unification*, as disclosed by Applicant in paragraphs 63-64 and 86, comprises convoluting the various thematic roles into a *complete* single structure. Therefore the unification step disclosed by the

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Applicant is equivalent to Tsourikov *et al.*'s summarization of SAO structures, as further noted in Col. 6, Line 53-67.

5. Regarding claim 6, Applicant argues that Tsourikov *et al.* do not disclose the use of a trigger term in combination with a syntactic term. The examiner cannot concur with the Applicant. Tsourikov *et al.* disclose the use of a trigger term (verb or noun) and identifying the relationship with respect to other elements in the sentence in order to produce the SAO structure, thereby considering the order of the components of the sentence with respect to each other, as needed to effectively correlate terms in sentences where various SAOs may be found (see the use of grammar rules, parsing rules and semantic analysis in Col. 2, Line 55 – Col. 3, Line 5, and *representing the sense of the sentence* in Col. 4, Lines 39-43).

6. Regarding claim 8, Applicant argues that Tsourikov *et al.* do not disclose the assignment of thematic roles of experiencers and identifiers. The examiner cannot concur with the Applicant. Regarding *experiencers* (as defined by Applicant in paragraph 60 of the Specification), Tsourikov *et al.* disclose the identification of noun groups (Col. 2, Lines 48-54). With respect to *identifiers* (adjectives) Tsourikov *et al.* disclose tagging each word with its *word type* (Col. 5, Lines 1-6; see Fig. 8, wherein adjectives *external* and *magnetic* are both tagged as *JJ*).

7. Regarding claim 3, Applicant argues that the motivation cited for combining the teachings of Tsourikov *et al.* and Roberts *et al.* is insufficient.

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the teachings of Brash effectively supplement the teachings of Tsourikov *et al.* with the step of displaying a graphical representation of a diagrammed sentence. The teachings of Brash can be applied in the system of Tsourikov *et al.* in order to use the displayed representation of the parsed sentence for instructional purposes, or to make inferences, as further taught by Brash. Furthermore, a graphical representation of a diagrammed sentence may be employed in the system of Tsourikov *et al.* for informing the user of the system's approach to the query, or for potential edition by the user.

Double Patenting

8. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11

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F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-20 of copending Application No. 09/927782, since it is obvious to derive a method from the system implementing it. The method and system have one-to-one correspondence between steps and functions. As such, they are self-evidently unpatentable over each other.

This is a provisional obviousness-type double patenting rejection.

Allowable Subject Matter

10. Claims 7, 9-10 and 17-20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the

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limitations of the base claim and any intervening claims. Also, the obviousness double patenting rejection would need to be overcome or terminal disclaimer filed.

11. Regarding claim 7, Tsourikov *et al.* do not disclose said thematic role assignment is performed by translating caseframe-extracted elements to specific thematic roles.

12. Regarding claim 9, Tsourikov *et al.* do not disclose said thematic assignment uses conceptual thematic roles defined according to a particular caseframe useful in a specific subject area.

13. Regarding claim 10, Tsourikov *et al.* disclose said step of building a relational text index includes at least in part by storing information selected from the group consisting of sentence information, semantic hierarchy information, semantic category information, generic thematic role information (*identifying equivalencies and associations among structures for each sentence for each document and generating and storing a summary of such relationships*, Col. 3, Lines 32-47; *storing relevant document along with its Subject-Action-Object (SAO) structures*, Col. 5, Lines 23-25; Col. 2, Lines 55-66).

However, Tsourikov *et al.* do not disclose building a relational text index at least in part by storing specifier thematic role information.

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14. Regarding claim 16, Tsourikov *et al.* disclose a method for creating a relational text index comprising:

accessing a corpa of natural language text (Col. 4, Lines 28-38);

parsing sentences in said documents to generate diagrammed sentences

(*semantic processor, parsing each sentence*, Col. 4, Lines 34-45; Col. 4, Line 7, see

Parsed Sentence, Fig. 11). [Examiner has interpreted the term *diagrammed sentence*

as defined in applicant's Specification [048]: *Parsing allows a computer to diagram text, identifying its grammatical parts and the roles of words within sentences.*]

applying caseframes to generate caseframe extractions (*parsing each sentence into a coded framework*, Col. 2, Lines 55-57; Fig. 8, Fig. 11; *coded frameworks or SAO (Subject-Action-Object) are applied to candidate documents*, Col. 3, Lines 2-7);

performing thematic role assignment tool on said caseframe extractions to generate thematic role extractions (*identifying subjects, actions and objects (SAO extractions)*, Col. 2, Lines 60-66);

accessing a relational text index file, and a relational text index builder capable of appending thematic role information to said relational text index file (*identifying equivalencies and associations among structures for each sentence for each document and generating and storing a summary of such relationships*, Col. 3, Lines 32-47);

wherein said parsing step produces an output selected from the group consisting of noun phrases, verb phrases, prepositional phrases, adverbial phrases, adjectival phrases, clauses, and combinations of them (*databases with grammar rules to aid in parsing and framework coding*, Col. 5, Lines 55-60; Fig. 6, element 66; Fig. 9; Fig. 10;

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combining groups into a natural language sentence, Col. 5, Lines 45-56; see *Combiner* Fig. 6, elements 68 and 70).

However, Tsourikov *et al.* do not disclose said thematic role assignment being performed by translating raw caseframe-extractions to specific thematic roles.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

16. Claims 1-2, 4-6 and 8, 11-12, 14 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsourikov *et al.* (US Patent 6,167,370).

17. Regarding claims 1 and 4 Tsourikov *et al.* disclose a method for creating a relational text index comprising:

accessing a natural language text document (Col. 4, Lines 28-38);

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parsing said documents in order to identify grammatical parts sentences in said documents (*semantic processor, parsing each sentence*, Col. 4, Lines 34-45);

applying caseframes to said parsed sentences to generate caseframe extractions, caseframes being syntactic structures that recognize local area context (*parsing each sentence into a coded framework*, Col. 2, Lines 55-57; Fig. 8, Fig. 11; *coded frameworks or SAO (Subject-Action-Object) are applied to candidate documents*, Col. 3, Lines 2-7);

performing thematic role assignment on said caseframe extractions to generate thematic role extractions (*identifying subjects, actions and objects (SAO extractions)*, Col. 2, Lines 60-66);

performing unification for each sentence that generates more than one thematic role extraction to generate a single unified representation of each sentence (*a sentence can have a plurality of SAO extractions and these are normalized into a SAO structure*, Col. 2, Lines 60-66; SAO normalizer, Fig. 4, element 42; see *Parsed Sentence*, Fig. 11; *combining groups into a natural language sentence*, Col. 5, Lines 45-56; see *Combiner* Fig. 6, elements 68 and 70);

utilizing sentence information to build a relational text index that is usable by a computer system (*identifying equivalencies and associations among structures for each sentence for each document and generating and storing a summary of such relationships*, Col. 3, Lines 32-47);

wherein said parsing step produces an output selected from the group consisting of noun phrases, verb phrases, prepositional phrases, adverbial phrases, adjectival

phrases, clauses, and combinations of them (*databases with grammar rules to aid in parsing and framework coding*, Col. 5, Lines 55-60; Fig. 6, element 66; Fig. 9; Fig. 10; *combining groups into a natural language sentence*, Col. 5, Lines 45-56; see *Combiner* Fig. 6, elements 68 and 70).

18. Regarding claim 2, Tsourikov *et al.* disclose said parsing step produces a diagrammed sentence (Col. 4, Line 7, see *Parsed Sentence*, Fig. 11). [Examiner has interpreted the term *diagrammed sentence* as defined in the Applicant's Specification [048]: *Parsing allows a computer to diagram text, identifying its grammatical parts and the roles of words within sentences.*]

19. Regarding claim 5, Tsourikov *et al.* disclose said step of applying caseframes extracts information of particular interest to a user from at least some of said sentences (Col. 4, Lines 10-11, see *SAO extraction*, Fig. 12, Col. 4, Lines 59-62; *comparing SAO structures to look for matches, matching documents are marked and stored as relevant*, Col. 5, Lines 16-21).

20. Regarding claim 6, Tsourikov *et al.* disclose wherein at least some of said caseframes are based on both a trigger term and a syntactic term (*Subject-Action-Object extractions*, Col. 2, Lines 60-66, see *SAO extraction*, Fig. 12). [Examiner has interpreted the terms *trigger term* and *syntactic term* as defined in the Applicant's

Specification [055]; *trigger term* meaning an action verb and *syntactic term* meaning the subject of the action.]

21. Regarding claim 8, Tsourikov *et al.* disclose said thematic role assignment includes assigning roles selected from the group consisting of actions, actors, objects, experiencers, and identifiers (*grammar rules, system identifies Subject-Action-Object extractions*, Col. 2, Lines 55-66; see *Tagged Sentence*, Fig. 8; *tagging a code to every word of the parsed text which code designates the word type*, Col. 5, Lines 1-9).

22. Regarding claim 11, Tsourikov *et al.* disclose said step of building a relational text index includes the step of appending data from one of said unification step and thematic role assignment step to said relational text index (*identifying equivalencies and associations among structures for each sentence for each document and generating and storing a summary of such relationships*, Col. 3, Lines 32-47; Fig. 3, elements 20 and 18; see *verb, subject and object synthesizers*, and *Combiner* in Fig. 6, elements 56, 58, 60 and 68; Fig. 6, element 18).

23. Regarding claim 12, Tsourikov *et al.* disclose said step of building a relational text index includes the step of, for each actor, action or object in a sentence, append its raw form and morphological root form to said relational text index, and information locating said sentence in a document (*storing each document through Subject-Action-*

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Object structures, Col. 3, Lines 25-47; see SAO extraction, Fig. 12 and Normalized SAO extraction, Fig. 13).

24. Regarding claim 14, Tsourikov *et al.* wherein said step of building a relational text index includes the step of creating a key value for each record and recording it in said relational text index (*matching documents are ranked and stored*, Col. 5, Lines 23-25).

25. Regarding claims 15, Tsourikov *et al.* disclose said parsing step was performed using a parser which utilizes a semantic hierarchy parser, creating a record for each node in the hierarchy, and creating a record for each term containing its name and name of its semantic class (*hierarchical coded form*, Col. 5, Lines 9-11; see *Parsed Sentence*, Fig. 11; Col. 5, Lines 3-6, see Fig. 8).

26. Regarding claims 11-12 and 14, Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

27. Regarding claim 15, Applicant argues that Tsourikov *et al.* do not disclose the creation of each term containing its name and name of its semantic form. The examiner cannot concur with the Applicant. Tsourikov *et al.* disclose the creation and storage of element records including the name and semantic form (Col. 5, Lines 11-13; Fig. 11)

Claim Rejections - 35 USC § 103

28. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

29. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsourikov *et al.* (US Patent 6,167,370), in view of Brash (US Patent 5,960,384).

Tsourikov *et al.* do not disclose but Brash does disclose the step of displaying a graphical representation of said diagrammed sentence (Col. 1, Lines 15-19).

Therefore it would have been obvious to one ordinarily skilled in the art at the time of the invention to supplement the teachings of Tsourikov *et al.* with the step of displaying a graphical representation of said diagrammed sentence, as taught by Brash, in order to use the displayed representation of the parsed sentence for instructional purposes or to make inferences, as further taught by Brash (Col. 1, Lines 16-19).

Conclusion

30. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

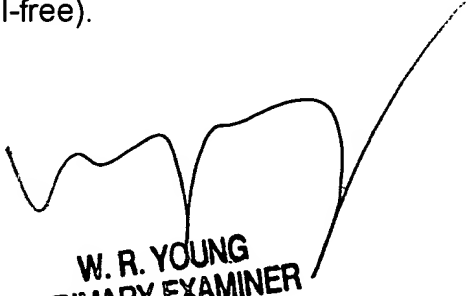
31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Minerva Rivero whose telephone number is (571) 272-7626. The examiner can normally be reached on Monday-Friday 9:00 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on (571) 272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

11/02/05



W. R. YOUNG
PRIMARY EXAMINER